

REPORT OF GENERAL SESSION

Criteria of Good Baitfish Species

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A. References

WP/Gen/3, WP/Gen/10, WP/Gen/11, Ref/8

B. Discussion

As a starting point for the discussion, categories of characteristics important in a good bait species as found in species now being used as live bait in pole-and-line fisheries were enumerated. This list of categories, as adopted from a list contained in WP/Gen/10, included the following:

1. Availability
 - a. Natural stocks
 - b. Cultured stocks
2. Behavior when chummed at sea
 - a. Movement (erratic)
 - b. Attract and hold tuna schools
3. Survival in captivity (hardiness)
4. Fishermen acceptance
 - a. Handling
5. Color and color patterns
6. Body form
7. Size

The question of the relevancy of each of the categories listed was discussed in detail. The discussion also included points on the general qualities of a good baitfish. In this regard there was an objection to the use of the term "perfect" baitfish. Insofar as the qualities of a good baitfish was concerned, some of the points brought out were that some species had qualities that were good in certain ways but not good in others. For example, there are baitfish that initially attracted the tunas but were not good in holding the fish at the boat. A possible example of such a situation was brought out with regard to the use of the northern anchovy by the Hawaiian pole-and-line fishermen. It was pointed out that in the recent trials of northern anchovy brought in from California, the Hawaiian fishermen chummed northern anchovy to initially attract the skipjack tuna schools to the boat. Once the skipjack tuna were attracted to the stern, the chummer switched to nehu in fishing the school. However, a comment was made that in not using the northern anchovy while fishing, the Hawaiian fishermen merely assumed that the northern anchovy was not as good as nehu. It was concluded that there may be some relevancy to this comment because it was also pointed out that perhaps the lack of a sufficient amount of northern anchovy was the reason why the Hawaiian fishermen used it so sparingly.

Another item brought up in the desirable characters of a baitfish was that the maximum size of the fish need not exceed 8 cm. It was noted in WP/Gen/3 that based on what is known about the visual

acuity of skipjack tuna and the clarity of the water in extremely clear water, a baitfish 8 cm long could be detected at 50 m, which under most circumstances in tropical waters is well within the usual distance a fish school is away from the boat when chumming is initiated. The question of whether the attractiveness of bait could be evaluated by determining what skipjack tuna eats was raised. However, it was pointed out that tunas are opportunistic feeders and ate almost anything they encountered.

On the item of the fishermen's acceptability of bait, it was brought out that fishermen acceptance has a lot to do with the species of bait actively being used, and that fishermen's acceptance was a real problem.

During the course of the discussion it became apparent that the seven categories listed could be subdivided into two areas, one as it relates to the fishermen's requirements and the other as it relates to the tuna's requirements. Consequently, the categories were rearranged to reflect this in the following manner:

Fishermen related

1. Survival
2. Fishermen acceptance
3. Availability
 - a. Natural stocks
 - b. Cultured stocks

Tuna related

1. Behavior when chummed at sea
 - a. Attract and hold
 - b. Movement
2. Size
3. Color
4. Body form

It was decided that it would be useful to list some of the more important baitfishes now being used in various areas to see how they measured up to the seven categories. Before proceeding with this there was further discussion on the suitability of some of the categories for this exercise. It was then decided that some of the categories were not relevant and were not used in the listing. It was also decided the comparison of the bait species would be based on how they compare among themselves with regard to the selected categories. The listing is shown below.

Category	Species						
	Dussumieriidae	Stolephorus	sp.	Anchovy	Caesioididae	Apogonidae	Atherinidae Clupeidae
Survival	Weak	Weak	Medium	Strong	Strong	Strong	Medium
Abundance							
Eastern Pacific	?	Low	High	None	None	High	High
Central Pacific	Low	Moderate	Low	None	Low	Low	Low
Western Pacific	High	High	High	Low	Low	Low	High
Behavior	Good	Good	Good	Good	Good	Poor	Fair
Size ¹	5 cm	4-6 cm	8-14 cm	4-8 cm	4-5 cm	4-8 cm	8-14 cm
Body form	Elongate	Elongate	Elongate	Elongate	Deep-bodied	Elongate	Elongate
Color	Shiny	Shiny	Shiny	Dull	Shiny	Shiny	Shiny
Color pattern	Silvery	Silvery	Silvery	Nonsilvery	Nonsilvery	Silvery	Silvery

¹Size used as bait.

In general, it was apparent that there are many variables involved in the determination of what is a good baitfish and that many of the variables are difficult to define.